

RADIATION THERAPY

A student who has completed the Job Corps Radiation Therapy program is equipped with the skills to contribute to the workplace as a valued employee from day one. Competence in academic and vocational skills is required for graduation. In addition, Job Corps students learn employability and technological skills. To complete his or her Radiation Therapy training, a student must master skills in these categories:

FUNDAMENTALS OF RADIATION THERAPY

Understand diagnosis, detection and prevention of cancer and its three treatment methods; discuss tumor radio sensitivities and normal tissue tolerances; describe radiobiological effects; discuss types of radioactive sources; discuss and describe the handling and loading of radioactive materials; describe the various physical forms of application; discuss the types of applicators used in radiation therapy; describe the principles of the treatment; describe the methods of calculations; describe the duties and responsibilities of radiation therapy technologist, types of equipment used and procedures employed in patient care; understand the meaning of pathology report; X-rays, examination; discuss and use the following: phantoms for calibration of equipment, types of meters for calibration and meters used for radiation detection; discuss components of lymphatic system and lymph flow direction and drainage and the role of the lymphatic system in the spread of tumors; discuss staging and grading as related to treatment selection.

RADIATION THERAPY TECHNOLOGIST DUTIES

Perform the duties and responsibilities of a radiation therapy technologist: set up and position patient; operate equipment; calculate doses, and record and check daily treatment records; prepare plans combining use of electron and photon beams in treatment planning; load and use all types of intracavitary and interstitial applicators in accordance with radiation safety techniques, perform the following treatment: fixed field, rotation, skin-scan, arc and moving-strip; use and understand basic language and commands to program computer to obtain a completed plan; perform all steps in process to complete a plastic mold; trace a contour and use it to obtain a treatment plan; discuss the various routes by which a tumor can metastasize; demonstrate how to load capsules and needles using proper equipment; perform simple repair and maintenance of equipment under supervision.

FUNDAMENTALS OF PATIENT CARE

Handle and assist critically ill patients in wheelchair and stretcher; position patient accurately and comfortably for treatment; use aseptic and/or sterile techniques when changing a dressing or setting up a sterile field; locate and assist with use of emergency equipment such as crash cart, oxygen and arrest procedures; disinfect areas and equipment and discard items that are contaminated; assist with all types of examinations; know and practice medico-legal aspects of the law; accurately read and interpret a treatment chart and then record on chart; photograph and tattoo treatment area; describe and implement various treatment techniques and set-ups; recognize any reactions or symptoms caused by treatment and withhold treatment until consulting with physician.

X-RAY AND EQUIPMENT FUNDAMENTALS

Under supervision, accurately set up and treat any patient undergoing radiation therapy; operate X-ray equipment correctly and produce an accurate film; use correct X-ray techniques to produce an X-ray; run an automatic film processor and be familiar with darkroom procedure; select and operate equipment with proper electron beam with relation to: maximum energy range and useful energy range; select and operate equipment with proper X-ray (photon) beam with relation to maximum dose and energy range; discuss and use phantoms for calibration of equipment; types of meters for calibration and meters used for radiation detection.

CALCULATIONS AND MEASUREMENTS

Calculate the given dosage and tumor dosage, percentage depth dose, tissue air and maximum ratio, output and field size dependency; using hand dosimetry, calculate isodose curves, shift method, weighting of field, normalization, wedges and compensators and irregular fields; set timer on monitor units; select proper filter on beam; perform emergency shut-off procedures; use controls for machine and treatment table; use all accessories and attachments necessary for treatment; change and reduce field according to physician's prescription.